

Atty. Docket No. Q62617
PATENT APPLICATION

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 09/758,434

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Original) A profile producing method of producing a profile representative of an association between a first color data representative of coordinates on a device-dependence color space dependent on a device mediating between image data including color data and a color image, and a second color data representative of coordinates on a common color space independent of devices, said profile producing method comprising:

a color association definition obtaining step of obtaining a color a definition defining an association between the first color data representative of coordinates on the device-dependence color space and the second color data representative of coordinates on the common color space; and

a profile producing step of producing a profile defining an association between the first color data representative of coordinates on the device-dependence color space and smoothed second color data representative of coordinates on the common color space, in accordance with the color association definition obtained in said color association definition obtaining step, via a smoothing step of smoothing the second color data representative of coordinates on the common

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color space to the first color data representative of coordinates on the device-dependence color space.

2. (Original) A profile producing method according to claim 1, wherein said color association definition obtaining step comprises:

 a color chart producing step of causing an output device to output a color chart composed of a plurality of color patches associated with a plurality of first color data; and
 a color chart colorimetry step of measuring a plurality of color patches constituting the color chart obtained in said color chart producing step to determine the second color data for the color patches,

 wherein the color association definition is obtained through said color chart producing step and said color chart colorimetry step.

3. (Currently amended) A profile producing method according to claim 1, wherein said profile producing step comprises:

 a smoothing step of smoothing the second color data to the first color data using the first color data and the second color data constituting the color association definition obtained in said color association definition obtaining step to determine a new color association definition defining an association between the first color data and smoothed second color data; and

 a profile construction step of constructing a profile in accordance with the new color association definition obtained in said smoothing step, the profile consisting of pairs of the first color data and the second color data mutually associated, which are more than the number of

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pairs of the mutually associated first color data and the smoothed second color data, constituting the new color association definition.

4. (Currently amended) A profile producing method according to claim 1, wherein said profile producing step comprises:

 a color association definition reconstruction step of producing a new color association definition in accordance with the color association definition obtained in said color association definition obtaining step, said new color association definition consisting of pairs of the first color data and the second color data, which are more than the number of pairs of the mutually associated first color data and the second color data, constituting the color association definition, and which are equal in number to pairs of the mutually associated first color data and the second color data, constituting the finally produced profile; and

 a smoothing step of smoothing the second color data to the first color data using the first color data and the second color data constituting the color association definition obtained in said color association definition obtaining step,

 whereby said profile producing step produces a profile defining an association between the first color data and smoothed second color data.

5. (Currently amended) A profile producing method according to claim 1, wherein said color association definition obtaining step is a step of obtaining a color association definition consisting of pairs of the first color data and the second color data, which are equal in number to

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pairs of the mutually associated first color data and the second color data, constituting the finally produced profile; and

 said profile producing step is a step of producing a profile defining an association between the first color data and smoothed second color data via a smoothing step of smoothing the second color data to the first color data using the first color data and the second color data constituting the color association definition obtained in said color association definition obtaining step.

6. (Original) A profile producing method according to claim 1, wherein said smoothing step is a step of performing a smoothing on a partial area on a color space.

7. (Original) A profile producing method according to claim 6, wherein said smoothing step is a step of performing a smoothing on a high density area on a color space.

8. (Original) A profile producing apparatus for producing a profile representative of an association between a first color data representative of coordinates on a device-dependence color space dependent on a device mediating between image data including color data and a color image, and a second color data representative of coordinates on a common color space independent of devices, said profile producing apparatus comprising:

 a color association definition obtaining section for obtaining a color association definition defining an association between the first color data representative of coordinates on the device-

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dependence color space and the second color data representative of coordinates on the common color space; and

a profile producing section for producing a profile defining an association between the first color data representative of coordinates on the device-dependence color space and smoothed second color data representative of coordinates on the common color space, in accordance with the color association definition obtained in said color association definition obtaining section, said profile producing section including a smoothing processing section for smoothing the second color data representative of coordinates on the common color space to the first color data representative of coordinates on the device-dependence color space.

9. (Currently amended) A profile producing apparatus according to claim 8, wherein said smoothing processing section receives the color association definition obtained in said color association definition obtaining section, and smoothes the second color data constituting the color association definition to the first color data constituting the color association definition to produce a new color association definition defining an association between the first color data and smoothed second color data, and

said profile producing section further comprises in addition to said smoothing processing section a profile construction section for constructing a profile in accordance with the new color association definition obtained in said smoothing processing section, the profile consisting of pairs of the first color data and the second color data mutually associated, which are more than

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the number of pairs of the mutually associated first color data and the smoothed second color data, constituting the new color association definition.

10. (Currently amended) A profile producing apparatus according to claim 8, wherein said profile producing section comprises

 a color association definition reconstruction section for producing a new color association definition in accordance with the color association definition obtained in said color association definition obtaining section, said new color association definition consisting of pairs of the first color data and the second color data, which are more than the number of pairs of the mutually associated first color data and the second color data, constituting the color association definition, and which are equal in number to pairs of the mutually associated first color data and the second color data, constituting the finally produced profile, and wherein

 said smoothing processing section receives the new color association definition obtained in said color association definition obtaining section, and smoothes the second color data constituting the new color association definition to the first color data constituting the new color association definition obtained in said color association definition obtaining section, thereby producing a profile defining an association between the first color data and smoothed second color data.

11. (Currently amended) profile producing apparatus according to claim 8, wherein said color association definition obtaining section obtains a color association definition consisting of

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pairs of the first color data and the second color data, which are equal in number to pairs of the mutually associated first color data and the second color data, constituting the finally produced profile, and

 said profile producing section produces a profile defining an association between the first color data and smoothed second color data in such a manner that the color association definition obtained in said color association definition obtaining section is fed to said smoothing processing section to smooth the second color data constituting the color association definition to the first color data constituting the color association definition obtained.

12. (Original) A profile producing apparatus according to claim 8, wherein said smoothing processing section performs a smoothing on a partial area on a color space.

13. (Original) A profile producing apparatus according to claim 12, wherein said smoothing processing section performs a smoothing on a high density area on a color space.

14. (Original) A profile producing apparatus according to claim 8, wherein said profile producing apparatus further comprises a handler for designating an area to be subjected to the smoothing processing, and said smoothing processing section performs a smoothing on an area designated in accordance with an operation of said handler.

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15. (Original) A profile producing apparatus according to claim 8, wherein said profile producing apparatus further comprises an area display section for displaying an area for which a smoothing processing is necessary.
16. (New) A profile producing method according to claim 1, wherein the smoothing step further comprising:
 - using the horizontal axis to denote dot% values of a first color data;
 - using the vertical axis to denote chromaticity values of a second color data;
 - obtaining a curve approximating data before the smoothing step; and
 - moving the data before the smoothing step on the curve.
17. (New) A profile producing method according to claim 1, wherein the smoothing step further comprising:
 - using the horizontal axis to denote dot% values of a first color data;
 - using the vertical axis to denote chromaticity values of a second color data;
 - obtaining at least two data before the smoothing step; and
 - obtaining an average of the at least two data before the smoothing step.
18. (New) The profile producing method according to claim 1, wherein both range and method for the smoothing are selectable.

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19. (New) A profile producing apparatus according to claim 8, wherein the smoothing processing section further comprising:

means for using the horizontal axis to denote dot% values of a first color data;
means for using the vertical axis to denote chromaticity values of a second color data;
means for obtaining a curve approximating data before smoothing; and
means for moving the data before smoothing on the curve.

20. (New) A profile producing apparatus according to claim 8, wherein the smoothing processing section further comprising:

means for using the horizontal axis to denote dot% values of a first color data;
means for using the vertical axis to denote chromaticity values of a second color data;
means for obtaining at least two data before smoothing; and
means for obtaining an average of the at least two data before smoothing.

21. (New) A profile producing apparatus according to claim 8, wherein both range and method for the smoothing are selectable.